

WO 2005/107422 A2

**Published:**

- without international search report and to be republished upon receipt of that report

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VISUAL DISPLAY AND METHOD OF PROVIDING A VISUAL DISPLAY

This invention relates to visual displays and more particularly to visual displays, and methods of providing visual displays, which are particularly adapted to be used for seasonal displays such as for Christmas. More
5 particularly, this invention relates to visual displays which include an outer inflatable member, an inner inflatable member and flakes movable in an annular direction in the space between the inner and outer inflatable members.

BACKGROUND OF A PREFERRED EMBODIMENT OF THE INVENTION

Visual displays are provided on a seasonal basis to celebrate the season.
10 For example, visual displays may be disposed in a family home during the Christmas season to enhance the appearance of the season in the home and to celebrate the season. Although popular, the visual displays now in use have a limited appeal. It would be desirable to provide a visual display which has an advanced aesthetic and sophistication and which represents a particular season
15 (e.g., Christmas) on a more fulfilling basis than the visual displays of the prior art.

BRIEF DESCRIPTION OF A PREFERRED EMBODIMENT
OF THE INVENTION

Outer and inner inflatable members and a motor assembly including a fan
20 are disposed on a base member. Air provided under pressure by the motor assembly including the fan passes through vents in the base member to inflate the inflatable members. Flakes are disposed in the space between the inflatable members. One vent, larger than the others, provides for the flakes to be lifted upwardly from the base member by the pressurized air. At least another vent in
25 the base member provides for a movement of the flakes by the pressurized air in an annular direction in the space between the inflatable members. A permeable cap disposed on the outer inflatable member limits the pressure in the inflatable members to a particular value.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

Figure 1 is a schematic front elevational perspective view of a visual display constituting a preferred embodiment of the invention;

5 Figure 2 is a bottom plan view of the visual display shown in Figure 1;

Figure 3 is an enlarged fragmentary perspective view of the top of the visual display;

Figure 4 is an enlarged fragmentary perspective view of the bottom portion of the visual display;

10 Figure 5 is an enlarged fragmentary sectional view in elevation of the top portion of the visual display; and

Figure 6 is an enlarged fragmentary sectional view taken substantially on the line 6-6 in Figure 2.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT
OF THE INVENTION

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A visual display generally indicated at 10 is shown in the drawings. The visual display 10 may be seasonal. For example, the visual display shown in the drawings includes an outer inflatable member 12 in the form of a globe and an inner inflatable member 14 in the form of a tree which may be considered to be a Christmas tree. The tree is disposed within the globe 12.

20

Flakes 16 are disposed in the space between the outer inflatable member 12 and the inner inflatable member 14. The flakes 16 may be preferably white to convey the appearance of snowflakes and are preferably light in weight and made from a suitable plastic material. It will be appreciated that the visual appearances of the outer inflatable member 12 and the inner inflatable member 14 are only illustrative and that the inflatable members 12 and 14 may have a vast number of

25

different shapes or configurations. The inflatable members 12 and 14 may be made from an impermeable plastic material.

The inflatable members 12 and 14 are disposed on a base member generally indicated at 18. The base member 18 has first and second annular surfaces 20 and 22 (Fig. 6). The annular surface 20 is below the annular surface 22 and has a greater radius than the annular surface 22. A belt 24 (Figure 6) is disposed on the annular surface 20 between a pair of positioning lobes 26. The belt 24 is tightened and retained against the outer inflatable member 12 by a buckle 28 (Fig 1). In like manner, a belt 30 is disposed on the annular surface 22. The inner inflatable member 14 is disposed between the annular surface 22 and the belt 30. The belt 30 is tightened and retained against the inner inflatable member by a buckle (not shown) similar to the buckle 29.

A motor assembly generally indicated at 34 (Fig. 2) is disposed on the base member 18. The motor assembly 34 includes a motor 36 and a fan 38. The fan 38 is attached to the motor 36 by spacers 40. Manifolds 42 extend from the fan 38 and provide channels for the flow of air under pressure. The base member 18 has a side wall 44 with a cut-out portion 45 which provides for the introduction of air to the fan 38.

Vents 46 and 48 (Fig. 4) are disposed in the base member 18 to pass air provided under pressure by the fan 38. The vent 46 is larger than the combined openings of the vents 48. The air passing through the vent 46 acts upon the flakes 16 to raise the flakes above the base member 18. The vents 48 act upon the flakes to move the flakes in an annular direction in the space above the base member 18 and between the inflatable members 12 and 14. In this way, the flakes become disposed throughout the space above the base member and between the inflatable members 12 and 14 without falling to the base member.

Light bulbs 50 (Figs. 4 and 6) are disposed in the space between the inflatable members 12 and 14. Electrical leads 52 communicate with leads 54

from an external source of power (e.g., a wall socket or a battery, neither of which is shown) and provide power to the bulbs 50 and the motor 36. The leads 52 extend through openings 56 in the base member 18. The openings 56 provide for the passage of pressurized air from the fan 38 into the inner inflatable member 14. The pressure imparted by the pressurized air to the interior of the inner inflatable member 14 is the same at each instant as the pressure imparted to the interior of the outer inflatable member 12.

A cap 60 (Figs. 3 and 5) suitably attached to the inflatable member 12 as by an adhesive covers an opening 62 at the top of the outer inflatable member 12. The cap 60 may be made from a permeable material such as a permeable plastic material to limit the pressure in the inflatable members 12 and 14 to a particular value providing for a full inflation, but not an over-inflation, of the inflatable members 12 and 14. The particular pressure of the air in the inflatable members 12 and 14 is not sufficient to cause the flakes 16 to become adhered to the cap 60 or to any portion of the inflatable members 12 and 14. In this way, all of the flakes 16 are able to travel continuously in an annular direction through the space between the inflatable members 12 and 14 when the members are inflated.

Air passes through the opening 45 to the motor assembly 34. When electrical power is introduced to the visual display 10, the air passes under pressure through the vents 46 and 48 to inflate the outer member 12 and through the openings 56 to inflate the inner member 14. The maximum pressure of the air in the outer member 12 and the inner member 14 is limited by the permeable cap 60. The resultant pressure in the outer and inner members 12 and 14 is sufficiently high to fully inflate the members but not so high that the flakes 16 become adhered to the cap 60 or the walls of the inflatable members.

The air pressing under pressure through the vent 46 acts in a direction and with a force to lift the flakes 16 from the base member 18. The air passing under pressure through the vents 48 move the flakes 18 in an annular direction around the visual display 10 in the space between the outer and inner members 12 and

14. In this way, the flakes 16 look and act like snowflakes in a display involving a globe (the outer member 12) and a Christmas tree (the inner member 14).

The visual display 10 thus provides a three-dimensional display of a scene ideally associated with Christmas. It will be appreciated that the visual display
5 10 is not limited to a Christmas scene. It can be adapted by a person of ordinary skill in the art to represent any religious or national holiday or any noteworthy event in many fields including sports, theatre, etc.

Although this invention has been disclosed and illustrated with reference
to particular preferred embodiments, the principles involved are susceptible for
10 use in numerous other embodiments which will be apparent to persons of average skill in the art. The invention is therefore to be limited only as indicated by the scope of the appended claims.

WE CLAIM:

1. In combination
a base member,
an outer inflatable member disposed on the base member,
5 an inner inflatable member disposed on the base member,
flakes disposed between the inner and outer inflatable members for
movement relative to the first and second inflatable members,
a motor assembly for generating pressurized air, and
vents for directing the pressurized air to inflate the inner and outer
10 members and to move the flakes in an annular direction in the space above the
base member and between the first and second inflatable members.
2. In a combination as set forth in claim 1 wherein
the vents include at least a first vent for moving the flakes
upwardly from the base member and at least a second vent for moving the flakes
15 in an annular direction in the space above the base member and between the first
and second inflatable members.
3. In a combination as set forth in claim 2 wherein
the first and second vents provide for the inflation of the outer and
inner members and wherein
20 a permeable cap is disposed on the outer inflatable member for
limiting the pressure of the air in the outer and inner inflatable members.
4. In a combination as set forth in claim 3 wherein
openings are provided in the base member to obtain the inflation of
the inner inflatable member to the limited pressure in the outer inflatable
25 member.
5. In a combination as set forth in claim 1 wherein
a fan is driven by the motor to generate a flow of air and wherein

vents in the base member receive the pressurized air to provide for an inflation of the outer and inner members.

6. In a combination as set forth in claim 1 wherein the base member is vented to provide for the inflation of the first and second inflatable member to the limited pressure and the annular circulation of the flakes in the space above the base member and between the first and second inflatable members.

7. In a combination as set forth in claim 5 wherein a permeable cap is disposed on the outer member to limit the inflation provided in the outer member and wherein, because of the limited pressure in the permeable cap, the flakes do not become attached to the permeable cap during their movement in the space above the base member and between the inner and outer inflatable members.

8. In a combination as set forth in claim 3, vents are provided in the base member to inflate the inner inflatable member to the limited pressure in the outer inflatable member and wherein a fan is driven by the motor to generate air and wherein vents in the base member provide for the pressurized air to inflate the outer and inner members and wherein the base member is vented to provide for the inflation of the first and second inflatable member to the limited pressure and the annular circulation of the flakes in the space above the base member and between the first and second inflatable members

a permeable cap is disposed on the outer member to limit the inflation provided in the outer and inner members and wherein, because of the limited pressure in the permeable cap, the flakes do not become attached to the permeable cap during their movement in the space above the base member and between the inner and outer inflatable members.

9. In combination,
a base member,
an outer inflatable member supported on the base member,
an inner inflatable member supported on the base member,
5 a motor assembly for producing a flow of pressurized air,
a permeable member on the outer inflatable member for limiting
the pressure of the air in the outer inflatable member, and
vents in the base member for inflating the inner inflatable member
and the outer inflatable member to the limited air pressure.
- 10 10. In a combination as set forth in claim 9 wherein
a first one of the vents provides a movement of flakes to positions
above the base member in the space between the outer and inner inflatable
members and wherein
at least a second one of the vents provides for a movement of the
15 flakes in an annular direction in the space between the outer and inner inflatable
members.
- 20 11. In a combination as set forth in claim 9,
a first strap disposed on the base member for retaining the first
inflatable member in a relationship to provide for the limited pressurization of the
first inflatable member,
a second strap disposed on the base member for retaining the
second inflatable member in a relationship to provide for the limited
pressurization of the second inflatable member.
- 25 12. In a combination as set forth in claim 11 wherein
at least a first one of the vents provides for a movement of flakes to
positions above the base member in the space between the outer and inner
inflatable members and wherein

at least a second one of the vents provides for a movement of the flakes in an annular direction in the space between the outer and inner inflatable members.

13. In a combination as set forth in claim 11 wherein
5 air inlets are provided for introducing air under pressure to the vents to provide for the pressurization of the inner and outer inflatable members to the limited pressure and wherein
a fan is driven by the motor to push the air under pressure through the air inlets and the vents to the inner and outer inflatable members to inflate the
10 inner and outer inflatable members to the limited pressure.

14. In a combination as set forth in claim 13 wherein
a first one of the vents provides for a movement of flakes to position above the base member in the space between the outer and inner inflatable members and wherein
15 at least a second one of the vents provides for a movement of the flakes in an annular direction in lateral direction in the space between the outer and inner inflatable members.

15. In combination,
a base member,
20 an outer inflatable member,
an inner inflatable member,
a first strap holding the outer inflatable member against the base member to provide for the inflation of the outer inflatable member,
a second strap holding the inner inflatable member against the base
25 member to provide for the inflation of the inner inflatable member,
vents in the base member for passing air under pressure into the outer inflatable member and the inner inflatable members to inflate the inflatable members, and

a motor assembly disposed in the base member and operable to produce air under pressure and to introduce the air under pressure to the vents for inflating the outer and inner inflatable members.

16. In a combination as set forth in claim 15, including,
5 a permeable cap on the outer inflatable member for limiting the pressure of air in the outer and inner inflatable caps.

17. In a combination as set forth in claim 15 wherein
the motor assembly includes a motor and a fan driven by the motor
for compressing air and wherein
10 the base member includes manifolds for directing air through the vents into the outer and inner inflatable members.

18. In a combination as set forth in claim 17
wherein the base member includes at least one manifold for
providing for the introduction of air into the base member and wherein
15 the motor assembly includes a fan for directing air under pressure into the manifold for the passage of the air through the vents into the outer and inner inflatable members.

19. In a combination as set forth in claim 15 wherein
lights are provided in the outer inflatable member to illuminate the
20 inflatable members and wherein
electrical leads for the lights extend through openings in the base member at positions on the base member interior to the inner inflatable member and wherein
air passes under pressure through the openings in the base member
25 to inflate the inner inflatable member.

20. In a combination as set forth in claim 11 wherein
the motor assembly includes a motor and a fan driven by the motor
for compressing air and wherein

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the base member includes at least one manifold for directing air through the vents into the outer and inner inflatable members and wherein

the motor assembly includes a fan for directing air under pressure into the manifold for the passage of the air through the vents into the outer and
5 inner inflatable members and wherein

lights are provided in the outer inflatable member to illuminate the inflatable members and wherein

electrical leads for the lights extend through openings in the base member at positions on the base member interior to the inner inflatable member
10 and wherein

air extends under pressure through the openings in the base member to inflate the inner inflatable member.

21. In combination

a base member,
15 an inner inflatable member secured to the base member to define an enclosure with the base member,

an outer inflatable member secured to the base member to define an enclosure with the base member,

the inner inflatable member being disposed within the outer
20 inflatable member,

the base member being constructed to pass air under pressure into the outer inflatable member and into the inner inflatable member,

the outer inflatable member being constructed to limit the pressure of air in the inflatable members, and

25 a motor assembly secured to the base member to generate air under pressure and to introduce the air into the inner and outer inflatable members.

22. In a combination as set forth in claim 21,

there being a plurality of flakes between the outer inflatable member and inner inflatable members,

the base member being constructed to move the flakes upwardly, and in an annular direction, in the space between the inner and outer inflatable members.

23. In a combination as set forth in claim 21,
5 the outer inflatable member being constructed to prevent the flakes from sticking to the surface of the outer inflatable member during the movement of the flakes in the space between the inner and outer inflatable members.

24. In a combination as set forth in claim 21,
the inner and outer inflatable members being open at their bottom
10 ends and being disposed on the base member to close the openings at their bottom ends for the reception of the air under pressure in the inflatable members, and

straps being provided on the base member to retain the first and second inflatable members on the base member in the uninflated and inflated
15 conditions of the inflatable members.

25. In a combination as set forth in claim 21,
light bulbs in the space between the inner and outer inflatable members,
at least one opening in the base member, the opening providing for
20 the flow of air under pressure into the inner inflatable member, and
electrical leads extending through the at least one opening in the base member to the light bulbs for illuminating the light bulbs.

26. In a combination as set forth in claim 22,
there being a plurality of flakes between the outer inflatable
25 member and the inner inflatable member,
the base member being constructed to move the flakes upwardly, and in an annular direction, in the space between the inner and outer inflatable members,

the outer inflatable member being constructed to prevent the flakes from sticking to the surface of the outer inflatable member during the movement of the flakes in the space between the inner and outer inflatable members,

the inner and outer inflatable members being open at their bottom
5 ends and being disposed on the base member to close the openings at their bottom ends for the reception of the air under pressure in the inflatable members, and

straps on the base member to retain the first and second inflatable members on the base member in the uninflated and inflated conditions of the
10 inflatable members,

light bulbs in the space between the inner and outer inflatable members,

at least one opening in the base member, the opening providing for the flow of air under pressure into the inner inflatable member, and
15 electrical leads extending through the at least one opening in the base member to the light bulbs for illuminating the light bulbs.

27. In combination,
a base member,
an outer inflatable member disposed on the base member,
20 an inner inflatable member disposed on the base member,
the inner inflatable member being disposed within the outer inflatable member,

a motor assembly on the base assembly for generating pressurized air, and
25 the base member being constructed to direct the pressurized air into the inflatable members for inflating the inflatable members.

28. In a combination as set forth in claim 27,
the outer inflatable member being constructed to limit the pressure of the air in the inflatable member.

29. In a combination as set forth in claim 27,
the base member being constructed to provide for the introduction
of air to the motor assembly for the generation of pressurized air by the motor
assembly and for the introduction of the pressurized air into the inner and outer
5 inflatable members to inflate the inner and outer inflatable members.

30. In a combination as set forth in claim 27,
there being flakes in the space between the inner and outer
inflatable members,
the base member being constructed to provide the flakes with
10 movements having upward and lateral components to provide for a continuous
movement of the flakes in the space between the inner and outer inflatable
members while the members are inflated.

31. In a combination as set forth in claim 28 wherein
the base member is constructed to provide for the introduction of
15 air to the motor assembly for the generation of pressurized air by the motor
assembly and for the introduction of the pressurized air into the inner and outer
inflatable members and wherein

flakes are disposed in the space between the inner and outer
inflatable members and wherein
20 the base member is constructed to provide the flakes with
movements having upward and lateral components to provide for a continuous
movement of the flakes in the space between the inner and outer inflatable
members while the members are inflated.

32. A method of providing a visual display, including the steps of:
25 disposing an outer inflatable member and an inner inflatable
member on a base member and disposing flakes in the space between the inner
and outer inflatable members,
generating pressurized air,

introducing the pressurized air into the inner and outer inflatable members to provide for a movement of the flakes upwardly from the base member and in an annular path in the space between the inner and outer inflatable members, and

- 5 providing a limitation of the pressure in the outer inflatable member to a particular value.

33. A method as set forth in claim 32, including the steps of:
providing for the production of the limited pressure in the inner inflatable member.

- 10 34. In a method as set forth in claim 32, including the step of:
providing for the pressure in the outer inflatable member to have a limited value preventing the flakes from adhering to the outer inflatable member.

35. In a method as set forth in claim 32 wherein
a permeable cap is disposed on the inner inflatable member to
15 provide for the production of air under pressure at a limited value, thereby to prevent the flakes from adhering to the permeable cap.

36. In a method as set forth in claim 32 wherein
vents are provided in the base member to pass the air under
pressure into the inner and outer inflatable members to provide for the movement
20 of the flakes upwardly from the base member and in the annular path in the space between the inner and outer inflatable members.

37. In a method as set forth in claim 33 including the step of:
providing for the pressure in the outer inflatable member to have a limited value preventing the flakes from adhering to the outer inflatable member.

- 25 38. A method as set forth in claim 35 wherein
vents are provided in the base member to pass the air under
pressure into the inner and outer inflatable members to provide for the movement

of the flakes upwardly from the base member and in the annular path in the space between the inner and outer inflatable members.

39. A method as set forth in claim 33,
providing for the pressure in the outer inflatable member to have a
5 limited value preventing the flakes from adhering to the outer inflatable member,

40. A method as set forth in claim 33 wherein
a permeable cap is disposed on the inner inflatable member to
provide for the production of air under pressure at a limited value, thereby to
prevent the flakes from adhering to the permeable cap and wherein,
10 vents are provided in the base member to pass the air under
pressure into the inner and outer inflatable members to provide for the movement
of the flakes upwardly from the base member and in the annular path in the space
between the inner and outer inflatable members.

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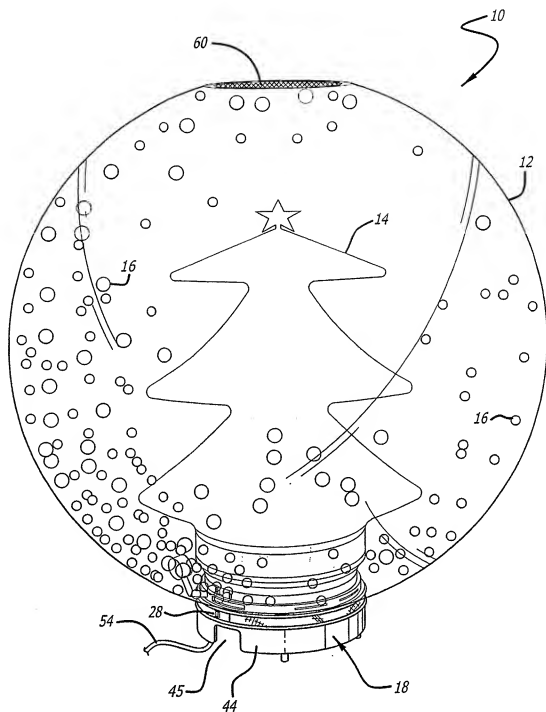


FIG. 1

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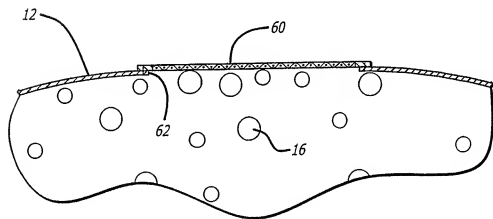
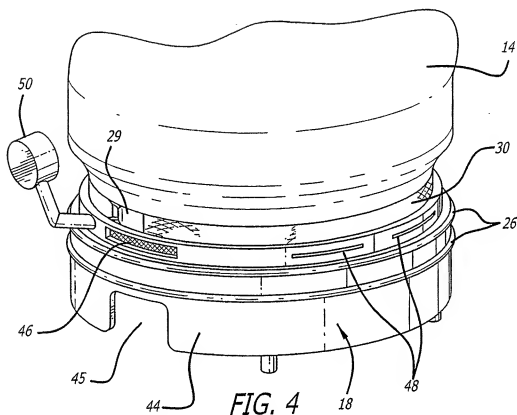
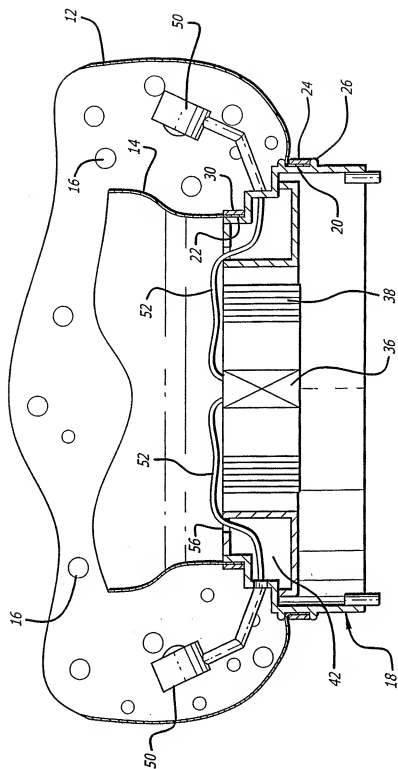


FIG. 5

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(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
17 November 2005 (17.11.2005)

PCT

(10) International Publication Number
WO 2005/107422 A3(51) International Patent Classification: **G09F 19/08**,
15/00, 19/00(21) International Application Number:
PCT/US2005/015892

(22) International Filing Date: 6 May 2005 (06.05.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/841,696 6 May 2004 (06.05.2004) US

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Lee & Utecht, LLP, Howard Hughes Center, 6060 Center
Drive, 10th Floor, Los Angeles, CA 90045 (US).(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
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MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM,
PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,
SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN,
YU, ZA, ZM, ZW.(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
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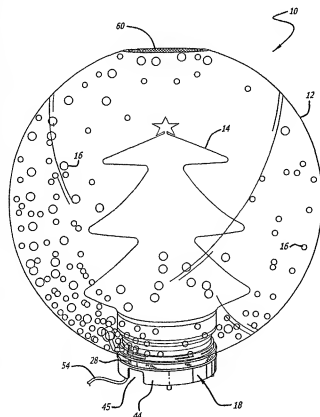
Published:

— with international search report

(88) Date of publication of the international search report:
16 March 2006

(Continued on next page)

(54) Title: VISUAL DISPLAY AND METHOD OF PROVIDING A VISUAL DISPLAY

(57) Abstract: Outer (12) and inner (14) inflatable
members and a motor assembly including a fan are
disposed on a base member (18). Air provided un-
der pressure by the motor assembly including the fan
passes through vents in the base member (18) to in-
flate the inflatable members (12, 14). Flakes (16)
are disposed in the space between the inflatable members
(12, 14). One vent, larger than the others, provides
for the flakes (16) to be lifted upwardly from the base
member (18) by the pressurized air. At least another
vent in the base member (18) provides for a move-
ment of the flakes (16) by the pressurized air in an
annular direction in the space between the inflatable
members (12, 14). A permeable cap (60) disposed on
the outer inflatable member (12) limits the pressure in
the outer (12) and inner (14) inflatable members to a
particular value.

WO 2005/107422 A3



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A. CLASSIFICATION OF SUBJECT MATTER

G09F19/08 G09F15/00 G09F19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G09F A63H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 203 17 200 UI (HO LEE CO., LTD) 19 February 2004 (2004-02-19) paragraph '0014! - paragraph '0015! figures 1-3	1-40
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 11, 30 September 1999 (1999-09-30) & JP 11 147400 A (CHO KICHINAN), 2 June 1999 (1999-06-02) abstract	1-40
A	US 5 125 177 A (COLTING ET AL) 30 June 1992 (1992-06-30) column 2, line 29 - line 56 figures 1-5	1-40
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Date of the actual completion of the International search

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09/12/2005

Name and mailing address of the ISA

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C:(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/095831 A1 (TSAI JUI-AN) 25 July 2002 (2002-07-25) paragraph '0013! paragraph '0015! figures 1-5 -----	1-40
A	DE 202 17 692 U1 (GOEKE, REINHOLD) 27 February 2003 (2003-02-27) page 4, line 22 - page 5, line 19 figures 1-3 -----	1-40
A	US 5 778 581 A (BAILEY ET AL) 14 July 1998 (1998-07-14) column 2, line 16 - line 36 figures 1-3 -----	1-40

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JP 11147400	A	02-06-1999	NONE	
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